

SEQUENCE LISTING

<110> Alexandra Charlesworth
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 John Baird
 Keith Linder

<120> ISOLATION OF THE LAMININ Y2 GENE IN
 HORSES AND ITS USE IN DIAGNOSING JUNCTIONAL EPIDERMOLYSIS
 BULLOSA

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19

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Pro	Ala	Ala	Arg	Ala	Thr	Ser	Arg	Arg	Glu	Val	Cys	Asp	Cys	Asn	Gly
			20					25					30		
His	Ser	Arg	Gln	Cys	Ile	Phe	Asp	Arg	Glu	Leu	His	Arg	Gln	Thr	Gly
		35					40					45			
Asn	Gly	Phe	Arg	Cys	Leu	Asn	Cys	Asn	Asp	Asn	Thr	Asp	Gly	Ile	His
	50				55						60				
Cys	Glu	Lys	Cys	Lys	Asn	Gly	Phe	Tyr	Arg	His	Arg	Glu	Arg	Asp	Arg
	55				70					75				80	
Cys	Leu	Pro	Cys	Asn	Cys	Asn	Ser	Lys	Gly	Ser	Leu	Ser	Ala	Arg	Cys
			85						90					95	
Asp	Asn	Ser	Gly	Arg	Cys	Ser	Cys	Lys	Pro	Gly	Val	Thr	Gly	Ala	Arg
			100					105					110		
Cys	Asp	Arg	Cys	Leu	Pro	Gly	Phe	His	Met	Leu	Thr	Asp	Ala	Gly	Cys
		115				120						125			
Thr	Gln	Asp	Gln	Arg	Leu	Leu	Asp	Ser	Lys	Cys	Asp	Cys	Asp	Pro	Ala
	130					135					140				
Gly	Ile	Ala	Gly	Pro	Cys	Asp	Ala	Gly	Arg	Cys	Val	Cys	Lys	Pro	Ala
	145				150					155				160	
Val	Thr	Gly	Glu	Arg	Cys	Asp	Arg	Cys	Arg	Ser	Gly	Tyr	Tyr	Asn	Leu
			165						170					175	
Asp	Gly	Gly	Asn	Pro	Glu	Gly	Cys	Thr	Gln	Cys	Phe	Cys	Tyr	Gly	His
			180					185					190		
Ser	Ala	Ser	Cys	Arg	Ser	Ser	Ala	Glu	Tyr	Ser	Val	His	Lys	Ile	Thr
		195					200					205			
Ser	Thr	Phe	His	Gln	Asp	Val	Asp	Gly	Trp	Lys	Ala	Val	Gln	Arg	Asn
	210				215						220				
Gly	Ser	Pro	Ala	Lys	Leu	Gln	Trp	Ser	Gln	Arg	His	Gln	Asp	Val	Phe
	225				230					235				240	
Ser	Ser	Ala	Gln	Arg	Leu	Asp	Pro	Val	Tyr	Phe	Val	Ala	Pro	Ala	Lys
			245						250					255	
Phe	Leu	Gly	Asn	Gln	Gln	Val	Ser	Tyr	Gly	Gln	Ser	Leu	Ser	Phe	Asp
		260						265					270		
Tyr	Arg	Val	Asp	Arg	Gly	Gly	Arg	His	Pro	Ser	Ala	His	Asp	Val	Ile
	275					280						285			
Leu	Glu	Gly	Ala	Gly	Leu	Arg	Ile	Thr	Ala	Pro	Leu	Met	Pro	Leu	Gly
	290				295						300				
Lys	Thr	Leu	Pro	Cys	Gly	Leu	Thr	Lys	Thr	Tyr	Thr	Phe	Arg	Leu	Asn

305					310					315				320	
Glu	His	Pro	Ser	Asn	Asn	Trp	Ser	Pro	Gln	Leu	Ser	Tyr	Phe	Glu	Tyr
				325					330					335	
Arg	Arg	Leu	Leu	Arg	Asn	Leu	Thr	Ala	Leu	Arg	Ile	Arg	Ala	Thr	Tyr
			340					345					350		
Gly	Glu	Tyr	Ser	Thr	Gly	Tyr	Ile	Asp	Asn	Val	Thr	Leu	Ile	Ser	Ala
		355				360						365			
Arg	Pro	Val	Ser	Gly	Ala	Pro	Ala	Pro	Trp	Val	Glu	Gln	Cys	Ile	Cys
	370					375					380				
Pro	Val	Gly	Tyr	Lys	Gly	Gln	Phe	Cys	Gln	Asp	Cys	Ala	Ser	Gly	Tyr
385					390					395					400
Lys	Arg	Asp	Ser	Ala	Arg	Leu	Gly	Pro	Phe	Gly	Thr	Cys	Ile	Pro	Cys
			405						410					415	
Asn	Cys	Gln	Gly	Gly	Ala	Cys	Asp	Pro	Asp	Thr	Gly	Asp	Cys	Tyr	
		420					425					430			
Ser	Gly	Asp	Glu	Asn	Pro	Asp	Ile	Glu	Cys	Ala	Asp	Cys	Pro	Ile	Gly
		435				440					445				
Phe	Tyr	Asn	Asp	Pro	His	Asp	Pro	Arg	Ser	Cys	Lys	Pro	Cys	Pro	Cys
	450					455					460				
His	Asn	Gly	Phe	Ser	Cys	Ser	Val	Met	Pro	Glu	Thr	Glu	Glu	Val	Val
465					470					475					480
Cys	Asn	Asn	Cys	Pro	Pro	Gly	Val	Thr	Gly	Ala	Arg	Cys	Glu	Leu	Cys
			485						490					495	
Ala	Asp	Gly	Tyr	Phe	Gly	Asp	Pro	Phe	Gly	Glu	His	Gly	Pro	Val	Arg
		500						505				510			
Pro	Cys	Gln	Pro	Cys	Gln	Cys	Asn	Asn	Asn	Val	Asp	Pro	Ser	Ala	Ser
		515					520					525			
Gly	Asn	Cys	Asp	Arg	Leu	Thr	Gly	Arg	Cys	Leu	Lys	Cys	Ile	His	Asn
	530					535					540				
Thr	Ala	Gly	Ile	Tyr	Cys	Asp	Gln	Cys	Lys	Ala	Gly	Tyr	Phe	Gly	Asp
545					550					555					560
Pro	Leu	Ala	Pro	Asn	Pro	Ala	Asp	Lys	Cys	Arg	Ala	Cys	Asn	Cys	Asn
			565						570					575	
Pro	Met	Gly	Ser	Glu	Pro	Val	Gly	Cys	Arg	Ser	Asp	Gly	Thr	Cys	Val
		580					585					590			
Cys	Lys	Pro	Gly	Phe	Gly	Gly	Pro	Asn	Cys	Glu	His	Gly	Ala	Phe	Ser
		595					600					605			
Cys	Pro	Ala	Cys	Tyr	Asn	Gln	Val	Lys	Ile	Gln	Met	Asp	Gln	Phe	Met
	610					615					620				
Gln	Gln	Leu	Gln	Arg	Met	Glu	Ala	Leu	Ile	Ser	Lys	Ala	Gln	Gly	Gly
625					630					635					640
Asp	Gly	Val	Val	Pro	Asp	Thr	Glu	Leu	Glu	Gly	Arg	Met	Gln	Gln	Ala
			645						650					655	
Glu	Gln	Ala	Leu	Gln	Asp	Ile	Leu	Arg	Asp	Ala	Gln	Ile	Ser	Glu	Gly
		660					665					670			
Ala	Ser	Arg	Ser	Leu	Gly	Leu	Gln	Leu	Ala	Lys	Val	Arg	Ser	Gln	Glu
		675					680					685			
Asn	Ser	Tyr	Gln	Ser	Arg	Leu	Asp	Asp	Leu	Lys	Met	Thr	Val	Glu	Arg
	690					695					700				
Val	Arg	Ala	Leu	Gly	Ser	Gln	Tyr	Gln	Asn	Arg	Val	Arg	Asp	Thr	His
705					710					715					720
Arg	Leu	Ile	Thr	Gln	Met	Gln	Leu	Ser	Leu	Ala	Glu	Ser	Glu	Ala	Ser
			725						730					735	
Leu	Gly	Asn	Thr	Asn	Ile	Pro	Ala	Ser	Asp	His	Tyr	Val	Gly	Pro	Asn
		740					745					750			
Gly	Phe	Lys	Ser	Leu	Ala	Gln	Glu	Ala	Thr	Arg	Leu	Ala	Glu	Ser	His
		755					760					765			

Val	Glu	Ser	Ala	Ser	Asn	Met	Glu	Gln	Leu	Thr	Arg	Glu	Thr	Glu	Asp	770	775	780
Tyr	Ser	Lys	Gln	Ala	Leu	Ser	Leu	Val	Arg	Lys	Ala	Leu	His	Glu	Gly	785	790	795
Val	Gly	Ser	Gly	Ser	Gly	Ser	Pro	Asp	Gly	Ala	Val	Val	Gln	Gly	Leu	805	810	815
Val	Glu	Lys	Leu	Glu	Lys	Thr	Lys	Ser	Leu	Ala	Gln	Gln	Leu	Thr	Arg	820	825	830
Glu	Ala	Thr	Gln	Ala	Glu	Ile	Glu	Ala	Asp	Arg	Ser	Tyr	Gln	His	Ser	835	840	845
Leu	Arg	Leu	Leu	Asp	Ser	Val	Ser	Arg	Leu	Gln	Gly	Val	Ser	Asp	Gln	850	855	860
Ser	Phe	Gln	Val	Glu	Glu	Ala	Lys	Arg	Ile	Lys	Gln	Lys	Ala	Asp	Ser	865	870	875
Leu	Ser	Thr	Leu	Val	Thr	Arg	His	Met	Asp	Glu	Phe	Lys	Arg	Thr	Gln	885	890	895
Lys	Asn	Leu	Gly	Asn	Trp	Lys	Glu	Glu	Ala	Gln	Gln	Leu	Leu	Gln	Asn	900	905	910
Gly	Lys	Ser	Gly	Arg	Glu	Lys	Ser	Asp	Gln	Leu	Leu	Ser	Arg	Ala	Asn	915	920	925
Leu	Ala	Lys	Ser	Arg	Ala	Gln	Glu	Ala	Leu	Ser	Met	Gly	Asn	Ala	Thr	930	935	940
Phe	Tyr	Glu	Val	Glu	Ser	Ile	Leu	Lys	Asn	Leu	Arg	Glu	Phe	Asp	Leu	945	950	955
Gln	Val	Asp	Asn	Arg	Lys	Ala	Glu	Ala	Glu	Glu	Ala	Met	Lys	Arg	Leu	965	970	975
Ser	Tyr	Ile	Ser	Gln	Lys	Val	Ser	Asp	Ala	Ser	Asp	Lys	Thr	Gln	Gln	980	985	990
Ala	Glu	Arg	Ala	Leu	Gly	Ser	Ala	Ala	Ala	Asp	Ala	Gln	Arg	Ala	Lys	995	1000	1005
Asn	Gly	Ala	Gly	Glu	Ala	Leu	Glu	Ile	Ser	Ser	Glu	Ile	Glu	Gln	Glu	1010	1015	1020
Ile	Gly	Ser	Leu	Asn	Leu	Glu	Ala	Asn	Val	Thr	Ala	Asp	Gly	Ala	Leu	1025	1030	1035
Ala	Met	Glu	Lys	Gly	Leu	Ala	Ser	Leu	Lys	Ser	Glu	Met	Arg	Glu	Val	1045	1050	1055
Glu	Gly	Glu	Leu	Glu	Arg	Lys	Glu	Leu	Glu	Phe	Asp	Thr	Asn	Met	Asp	1060	1065	1070
Ala	Val	Gln	Met	Val	Ile	Thr	Glu	Ala	Gln	Lys	Val	Asp	Thr	Arg	Ala	1075	1080	1085
Lys	Asn	Ala	Gly	Val	Thr	Ile	Gln	Asp	Thr	Leu	Asn	Thr	Leu	Asp	Gly	1090	1095	1100
Leu	Leu	His	Leu	Met	Asp	Gln	Pro	Leu	Ser	Val	Asp	Glu	Glu	Gly	Leu	1105	1110	1115
Val	Leu	Leu	Glu	Gln	Lys	Leu	Ser	Arg	Ala	Lys	Thr	Gln	Ile	Asn	Ser	1125	1130	1135
Gln	Leu	Arg	Pro	Met	Met	Ser	Glu	Leu	Glu	Glu	Arg	Ala	Arg	Gln	Gln	1140	1145	1150
Arg	Gly	His	Leu	His	Leu	Leu	Glu	Thr	Ser	Ile	Asp	Gly	Ile	Leu	Ala	1155	1160	1165
Asp	Val	Lys	Asn	Leu	Glu	Asn	Ile	Arg	Asp	Asn	Leu	Pro	Pro	Gly	Cys	1170	1175	1180
Tyr	Asn	Thr	Gln	Ala	Leu	Glu	Gln	Gln								1185	1190	

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<211> 1192

<212> PRT
<213> murine

<220>
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<400> 32

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Pro	Ala	Ser	Gln	Ala	Thr	Ser	Arg	Arg	Glu	Val	Cys	Asp	Cys	Asn	Gly	
			20					25					30			
Lys	Ser	Arg	Gln	Cys	Val	Phe	Asp	Gln	Glu	Leu	His	Arg	Gln	Ala	Gly	
		35					40					45				
Ser	Gly	Phe	Arg	Cys	Leu	Asn	Cys	Asn	Asp	Asn	Thr	Ala	Gly	Val	His	
	50					55					60					
Cys	Glu	Arg	Ser	Arg	Glu	Gly	Phe	Tyr	Gln	His	Gln	Ser	Lys	Ser	Arg	
65					70					75					80	
Cys	Leu	Pro	Cys	Asn	Cys	His	Ser	Lys	Gly	Ser	Leu	Ser	Ala	Gly	Cys	
				85					90					95		
Asp	Asn	Ser	Gly	Gln	Cys	Arg	Cys	Lys	Pro	Gly	Val	Thr	Gly	Gln	Arg	
			100					105						110		
Cys	Asp	Gln	Cys	Gln	Pro	Gly	Phe	His	Met	Leu	Thr	Asp	Ala	Gly	Cys	
		115					120						125			
Thr	Arg	Asp	Gln	Gly	Gln	Leu	Asp	Ser	Lys	Cys	Asp	Cys	Asp	Pro	Ala	
	130					135						140				
Gly	Ile	Ser	Gly	Pro	Cys	Asp	Ser	Gly	Arg	Cys	Val	Cys	Lys	Pro	Ala	
145					150					155					160	
Val	Thr	Gly	Glu	Arg	Cys	Asp	Arg	Cys	Arg	Pro	Arg	Asp	Tyr	His	Leu	
				165					170					175		
Asp	Arg	Ala	Asn	Pro	Glu	Gly	Cys	Thr	Gln	Cys	Phe	Cys	Tyr	Gly	His	
			180					185						190		
Ser	Ala	Ser	Cys	His	Ala	Ser	Ala	Asp	Phe	Ser	Val	His	Lys	Ile	Thr	
		195					200						205			
Ser	Thr	Phe	Ser	Gln	Asp	Val	Asp	Gly	Trp	Lys	Ala	Val	Gln	Arg	Asn	
	210				215						220					
Gly	Ala	Pro	Ala	Lys	Leu	His	Trp	Ser	Gln	Arg	His	Arg	Asp	Val	Phe	
225					230					235					240	
Ser	Ser	Ala	Arg	Arg	Ser	Asp	Pro	Val	Tyr	Phe	Val	Ala	Pro	Ala	Lys	
				245					250					255		
Phe	Leu	Gly	Asn	Gln	Gln	Val	Ser	Tyr	Gly	Gln	Ser	Leu	Ser	Phe	Asp	
			260					265						270		
Tyr	Arg	Val	Asp	Arg	Gly	Gly	Arg	Gln	Pro	Ser	Ala	Tyr	Asp	Val	Ile	
		275					280						285			
Leu	Glu	Gly	Ala	Gly	Leu	Gln	Ile	Arg	Ala	Pro	Leu	Met	Ala	Pro	Gly	
	290					295					300					
Lys	Thr	Leu	Pro	Cys	Gly	Ile	Thr	Lys	Thr	Tyr	Thr	Phe	Arg	Leu	Asn	
305					310					315					320	
Glu	His	Pro	Ser	Ser	His	Trp	Ser	Pro	Gln	Leu	Ser	Tyr	Phe	Glu	Tyr	
				325					330					335		
Arg	Arg	Leu	Leu	Arg	Asn	Leu	Thr	Ala	Leu	Leu	Met	Ile	Arg	Ala	Thr	
			340					345					350			
Tyr	Gly	Glu	Tyr	Ser	Thr	Gly	Tyr	Ile	Asp	Asn	Val	Thr	Leu	Val	Ser	
		355					360						365			
Ala	Arg	Pro	Val	Leu	Gly	Ala	Pro	Ala	Pro	Trp	Val	Glu	Arg	Cys	Val	
	370					375					380					
Cys	Leu	Leu	Gly	Tyr	Lys	Gly	Gln	Phe	Cys	Gln	Glu	Cys	Ala	Ser	Gly	
385					390					395					400	

Tyr Lys Arg Asp Ser Ala Arg Leu Gly Ala Phe Gly Ala Cys Val Pro
 405 410 415
 Cys Asn Cys Gln Gly Glu Gly Ala Cys Asp Pro Asp Thr Gly Asp Cys
 420 425 430
 Tyr Ser Gly Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile
 435 440 445
 Gly Phe Tyr Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro
 450 455 460
 Cys His Asn Gly Phe Ser Cys Ser Val Met Pro Glu Thr Glu Glu Val
 465 470 475 480
 Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu
 485 490 495
 Cys Ala Asp Gly Phe Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val
 500 505 510
 Arg Pro Cys Gln Arg Cys Gln Cys Asn Asn Asn Val Asp Pro Asn Ala
 515 520 525
 Ser Gly Asn Cys Asp Gln Leu Thr Gly Arg Cys Leu Lys Cys Ile Tyr
 530 535 540
 Asn Thr Ala Gly Val Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly
 545 550 555 560
 Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys
 565 570 575
 Ser Pro Met Gly Ala Glu Pro Gly Glu Cys Arg Gly Asp Gly Ser Cys
 580 585 590
 Val Cys Lys Pro Gly Phe Gly Ala Phe Asn Cys Asp His Ala Ala Leu
 595 600 605
 Thr Ser Cys Pro Ala Cys Tyr Asn Gln Val Lys Ile Gln Met Asp Gln
 610 615 620
 Phe Thr Gln Gln Leu Gln Ser Leu Glu Ala Leu Val Ser Lys Ala Gln
 625 630 635 640
 Gly Gly Gly Gly Gly Gly Thr Val Pro Val Gln Leu Glu Gly Arg Ile
 645 650 655
 Glu Gln Ala Glu Gln Ala Leu Gln Asp Ile Leu Gly Glu Ala Gln Ile
 660 665 670
 Ser Glu Gly Ala Met Arg Ala Val Ala Val Arg Leu Ala Lys Ala Arg
 675 680 685
 Ser Gln Glu Asn Asp Tyr Lys Thr Arg Leu Asp Asp Leu Lys Met Thr
 690 695 700
 Ala Glu Arg Ile Arg Ala Leu Gly Ser Gln His Gln Asn Arg Val Gln
 705 710 715 720
 Asp Thr Ser Arg Leu Ile Ser Gln Met Arg Leu Ser Leu Ala Gly Ser
 725 730 735
 Glu Ala Leu Leu Glu Asn Thr Asn Ile His Ser Ser Glu His Tyr Val
 740 745 750
 Gly Pro Asn Asp Phe Lys Ser Leu Ala Gln Glu Ala Thr Arg Lys Ala
 755 760 765
 Asp Ser His Ala Glu Ser Ala Asn Ala Met Lys Gln Leu Ala Arg Glu
 770 775 780
 Thr Glu Asp Tyr Ser Lys Gln Ala Leu Ser Leu Ala Arg Lys Leu Leu
 785 790 795 800
 Ser Gly Gly Gly Gly Ser Gly Ser Trp Asp Ser Ser Val Val Gln Gly
 805 810 815
 Leu Met Gly Lys Leu Glu Lys Thr Lys Ser Leu Ser Gln Gln Leu Ser
 820 825 830
 Leu Glu Gly Thr Gln Ala Asp Ile Glu Ala Asp Arg Ser Tyr Gln His
 835 840 845
 Ser Leu Arg Leu Leu Asp Ser Ala Ser Gln Leu Gln Gly Val Ser Asp

850	855	860
Leu Ser Phe Gln Val Glu Ala Lys Arg Ile Arg Gln Lys Ala Asp Ser		
865	870	875
Leu Ser Asn Leu Val Thr Arg Gln Thr Asp Ala Phe Thr Arg Val Arg		880
	885	890
Asn Asn Leu Gly Asn Trp Glu Lys Glu Thr Arg Gln Leu Leu Gln Thr		895
	900	905
Gly Lys Asp Arg Arg Gln Thr Ser Asp Gln Leu Leu Ser Arg Ala Asn		910
	915	920
Leu Ala Lys Asn Arg Ala Gln Glu Ala Leu Ser Met Gly Asn Ala Thr		925
	930	935
Phe Tyr Glu Val Glu Asn Ile Leu Lys Asn Leu Arg Glu Phe Asp Leu		940
945	950	955
Gln Val Glu Asp Arg Lys Ala Glu Ala Glu Glu Ala Met Lys Arg Leu		960
	965	970
Ser Ser Ile Ser Gln Lys Val Ala Asp Ala Ser Asp Lys Thr Gln Gln		975
	980	985
Ala Glu Thr Ala Leu Gly Ser Ala Thr Ala Asp Thr Gln Arg Ala Lys		990
	995	1000
Asn Ala Ala Arg Glu Ala Leu Glu Ile Ser Ser Glu Ile Glu Leu Glu		1005
	1010	1015
Ile Gly Ser Leu Asn Leu Glu Ala Asn Val Thr Ala Asp Gly Ala Leu		1020
1025	1030	1035
Ala Met Glu Lys Gly Thr Ala Thr Leu Lys Ser Glu Met Arg Glu Met		1040
	1045	1050
Ile Glu Leu Ala Arg Lys Glu Leu Glu Phe Asp Thr Asp Lys Asp Thr		1055
	1060	1065
Val Gln Leu Val Ile Thr Glu Ala Gln Gln Ala Asp Ala Arg Ala Thr		1070
	1075	1080
Ser Ala Gly Val Thr Ile Gln Asp Thr Leu Asn Thr Leu Asp Gly Ile		1085
	1090	1095
Leu His Leu Ile Asp Gln Pro Gly Ser Val Asp Glu Glu Gly Met Met		1100
1105	1110	1115
Leu Leu Glu Gln Gly Leu Phe Gln Ala Lys Thr Gln Ile Asn Ser Arg		1120
	1125	1130
Leu Arg Pro Leu Met Ser Asp Leu Glu Glu Arg Val Arg Arg Gln Arg		1135
	1140	1145
Asn His Leu His Leu Leu Glu Thr Ser Ile Asp Gly Ile Leu Ala Asp		1150
	1155	1160
Val Lys Asn Leu Glu Asn Ile Arg Asp Asn Leu Pro Pro Gly Cys Tyr		1165
	1170	1175
Asn Thr Gln Ala Leu Glu Gln Gln		1180
1185	1190	